

## POLYPLOIDY AND VITAMIN C IN *EMBLICA OFFICINALIS* GAERTN.

BY E. K. JANAKI AMMAL, F.A.SC. AND R. SUNDARA RAGHAVAN

(Central Botanical Laboratory, Allahabad)

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*Emblica officinalis* Gaertn., until recently known as *Phyllanthus emblica* L., is a moderately sized deciduous tree found growing wild throughout tropical India and southwards to Ceylon and Malacca. Its distribution extends through Malaysia to South China. It is also found as a cultivated tree throughout India and several large fruited varieties have arisen in cultivation.

The fruit of *Emblica officinalis* is well known for its high Vitamin C content and it has been used in Indian medicine from ancient times as a remedy for anæmia, jaundice and dysentery. It is also made into pickles and preserves, and a wine made out of its juice is considered a specific for bronchial disorders.

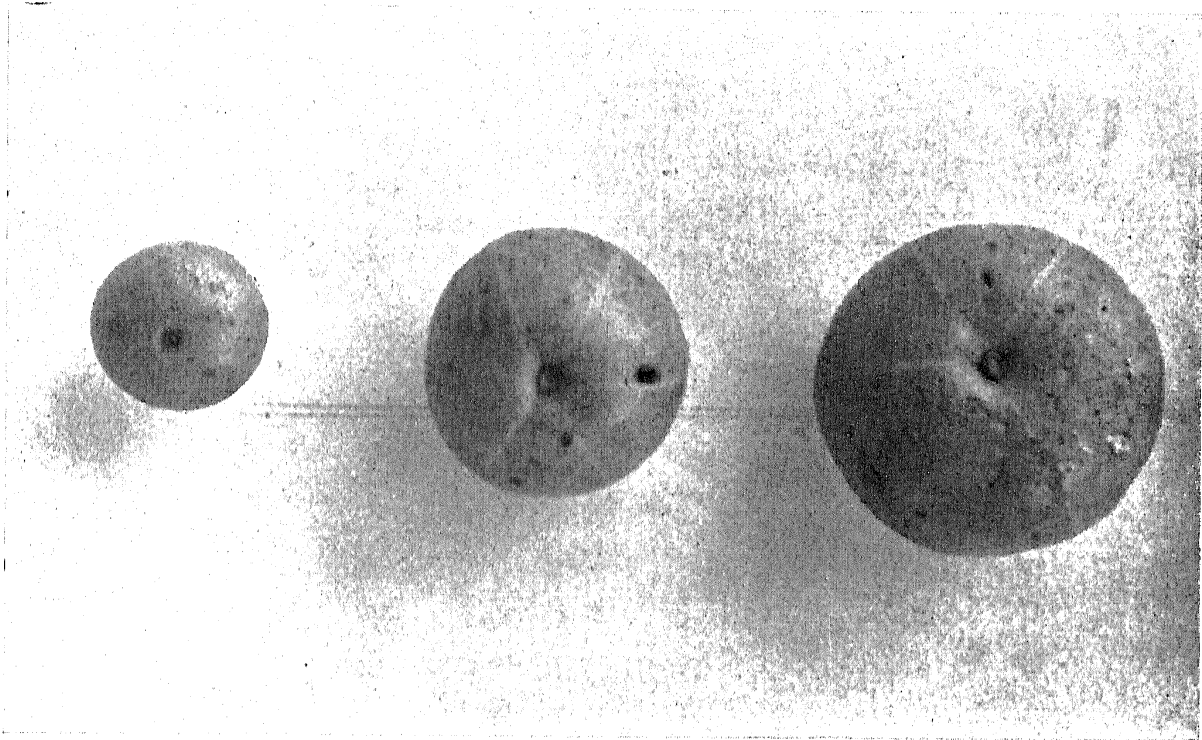
The first report on the chromosome number of *Emblica officinalis* was made by Perry (1943) who found the somatic number of it to be  $2n = 28$ .

Much variation in size of fruit was noticed between wild and cultivated forms of *Emblica officinalis* grown in Lucknow. Three types—small, medium and large fruited, were observed. The present study was undertaken to see if there existed any chromosome difference between the small and the large fruited varieties, and if this difference in size was correlated with any difference in the Vitamin C content of the fruits.

To our surprise the lowest chromosome number in the Lucknow plants studied by us was found to be  $2n = 98$ ! This number was also found in the wild forms collected from regions as far apart as the Vindhya and scrub jungles of Coimbatore and Malabar. Thus the Emblicas of India are higher polyploids ( $2n = 98 = 14x$ ) than the plant examined by Perry which is a tetraploid form.

Seedlings from large and medium fruited varieties when examined cytologically showed chromosome numbers varying from  $2n = 98-104$ . They are, therefore, to be considered as aneuploid segregates from the  $14x$  type which have been evidently selected for cultivation for their large-sized fruits.

Determination of ascorbic acid in the fruit samples of small, medium and large fruited Emblicas were made in the Laboratory of the Central Drug



Small, medium and large varieties of Lucknow *Emblica officinalis*.  
(Natural Size)